In the claims

1. (Currently amended) A stent for neutron capture therapy configured for implantation within a patient's body, the stent comprising a body portion fabricated from a material that incorporates a stable atomic element having a neutron capture cross-section greater than 10^3 barns, and emits therapeutic irradiation substantially only while being exposed to a thermal neutron irradiation after implantation in the patient's body.

2. (Original) The stent of claim 1, wherein the stable atomic element is chosen from the group consisting of ^{157}Gd, ^{155}Gd, ^{149}Sm, ^{113}Cd and ^{151}Eu.

3. (Original) The stent of claim 2, wherein the body portion comprises a metallic wire mesh.

4. (Original) The stent of claim 3, wherein the metallic wire mesh is fabricated from hollow wires, the stable atomic element located within the hollow wires.

5. (Original) The stent of claim 1, wherein the material comprises an alloy or mix incorporating the stable atomic element and a bulk material having a neutron capture cross-section less than 10^2 barns.

6. (Original) The stent of claim 3, wherein the metallic wire mesh is fabricated from an alloy or mix incorporating the stable atomic element.

7. (Original) The stent of claim 1, wherein the body portion is coated with a biologically compatible material that prevents contact between body tissue and the stable atomic element.

8. (Original) The stent of claim 1, wherein the stable atomic element is incorporated into the stent in a nonuniform density to vary a radiation dose obtained during neutron radiation therapy.

9. (Original) The stent of claim 1, wherein the stable atomic element further comprises multiple stable atomic elements.

10. (Original) The stent of claim 3 further comprising a fabric in communication with the metallic wire mesh.

11. (Original) The stent of claim 10, wherein the fabric provides a continuous tubular profile to the stent.

12. (Original) The stent of claim 1 further comprising a radiation source in communication with the stable atomic element.

13. (Original) The stent of claim 12, wherein the radiation source comprises a radiation source suitable for boron neutron capture therapy.

14. (Original) The stent of claim 12, wherein the radiation source comprises an accelerator.

15. (Currently amended) A method of manufacturing a stent for neutron capture therapy following implantation within a patient's body, the method comprising introducing a material into a body portion of the stent, the material incorporating a stable atomic element having a neutron capture cross-section suitable for radiation when subjected to neutron irradiation and that emits therapeutic radiation substantially only while being exposed to a thermal neutron irradiation after implantation in the patient's body.

16. (Original) The method of claim 15, wherein the radiation comprises localized temporal gamma radiation.

17. (Original) The method of claim 15, wherein introducing the material comprises introducing a stable atomic element chosen from the group consisting of ^{157}Gd, ^{155}Gd, ^{149}Sm, ^{113}Cd and ^{151}Eu.

18. (Original) The method of claim 15, wherein introducing the material comprises alloying or mixing the material with a bulk material used to fabricate the body portion of the stent.

19. (Original) The method of claim 15 further comprising distributing the stable atomic element when forming the stent body to obtain a stent suited for distributed radiation when subjected to neutron irradiation.

20. (Previously presented) A method of performing neutron capture therapy, the method comprising:

providing a stent comprising a body portion fabricated from a material that incorporates a stable atomic

element, the element having a neutron capture cross-section greater than 10^3 barns;

deploying the stent at a treatment site within a patient's vasculature; and

externally irradiating the patient near the treatment site with a thermal neutron irradiation, the stable atomic element preferentially absorbing and emitting the radiation to tissue at the treatment site substantially only while being exposed to the thermal neutron irradiation.

21.(Original) The method of claim 20, wherein preferentially absorbing and emitting the radiation comprises providing localized radiation therapy to the treatment site in a concentrated dose.

22.(Original) The method of claim 20, wherein the emitted radiation acts on surrounding tissue to a therapeutic benefit.

23.(Original) The method of claim 22, wherein the therapeutic benefit comprises reducing restenosis encountered after an interventional procedure.

24.(Original) The method of claim 23, wherein the interventional procedure is chosen from the group consisting of angioplasty and stenting.

25.(Original) The method of claim 20, wherein providing a stent comprising a body portion fabricated from a material that incorporates a stable atomic element comprises providing a stable atomic element chosen from the group consisting of ^{157}Gd, ^{155}Gd, ^{149}Sm, ^{113}Cd and ^{151}Eu.

26. (Canceled).

27. (Original) The method of claim 20, wherein the stable element has a half life on the order of milliseconds or less.